

Claims:

1. A method in a sawing apparatus (1) of a forest machine for preventing the whipping movement of a saw chain (6) breaking during sawing, wherein the method comprises the steps of:

- driving the saw chain (6) around a guide bar (12) by means of a drive gear (4) positioned on one end of the guide bar (12), wherein according to the normal operation the saw chain (6) moves from the guide bar (12) at the drive gear (4) and rotates back on top of the drive gear (4), and
- conducting the sawing of a tree trunk by rotating the guide bar (12) around a first rotation axis (A),

**characterized by:**

- moving a protective wall (9) during the sawing of a tree trunk in phase with the rotation of the guide bar (12) to maintain their mutual position, wherein the protective wall (9) is positioned in such a manner that it is capable of receiving the saw chain (6) breaking during the sawing as well as the tail of the broken saw chain, which tend to continue their movement past the drive gear (4), and guiding them to the desired direction.

2. The method according to claim 1, **characterized** by moving the protective wall (9) during the sawing in such a manner that the protective wall (9) is rotated around said first rotation axis (A) together with the guide bar (12).

3. The method according to claim 1 or 2, **characterized** by guiding the broken saw chain to the desired direction by means of the protective wall (9) that is located within a distance from the drive gear (4), curving in the same direction with the drive gear (4).

4. The method according to any of the claims 1 to 3, **characterized** by moving the protective wall (9) by means of a guide bar holder (3) or a

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moving part arranged to move in phase with the guide bar holder (3) during the sawing of a tree trunk.

5. A sawing apparatus of a forest machine, comprising:

- a frame part (2) for fastening the sawing apparatus (1),
- a guide bar holder (3) for fastening of a guide bar (12) and arranged to rotate around a first rotation axis (A) with respect to the frame part (2) for turning the guide bar (12) during the sawing of a tree trunk,
- a drive gear (4) positioned on one end of the guide bar (12) for driving a saw chain (6) around the guide bar (12) to perform the sawing, and
- a safety system comprising a protective wall (9) for receiving the saw chain (6) that has broken during the sawing,

**characterized in that:**

- the protective wall (9) is fastened to the guide bar holder (3) or a moving part arranged to move in phase with the guide bar holder (3) during the sawing of a tree trunk, for maintaining the protective wall (9) positioned such that it is capable of receiving the broken saw chain as well as the tail of the broken saw chain, which tend to continue their movement past the drive gear (4), and guiding them to a desired direction.

6. The sawing apparatus according to claim 5, **characterized** in that the protective wall (9) is positioned on that side of the drive gear (4) on which the saw chain (6) moves in accordance with normal operation from the guide bar (12) to the drive gear (4) and rotates back on top of the drive gear (4).

7. The sawing apparatus according to claim 5 or 6, **characterized** in that the protective wall (9) is located within a distance from the drive gear (4), curving in the same direction with the drive gear (4).

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8. The sawing apparatus according to any of the claims 5 to 7, **characterized** in that the first end of the protective wall (9) is located on the side of the incoming saw chain (6) and comprises a wall part (10) curving away from the drive gear (4) and guiding the broken saw chain between the drive gear (4) and the protective wall (9).

9. The sawing apparatus according to any of the claims 5 to 8, **characterized** in that the protective wall (9) substantially covers a sector area of 100° to 120°, whose central point is the first rotation axis (A).

10. The sawing apparatus according to any of the claims 5 to 9, **characterized** in that the drive gear (4) is arranged to rotate around the first rotation axis (A).

11. The sawing apparatus according to any of the claims 5 to 9, **characterized** in that the moving part is arranged to rotate in phase with the guide bar (12) around the first rotation axis (A) such that the location of the protective wall (9) in relation to the saw chain (6) remains the same.

12. The sawing apparatus according to any of the claims claim 5 to 10, **characterized** in that the protective wall (9) is positioned substantially perpendicularly in relation to the plane coinciding with the guide bar (12) and the movement of the saw chain (6).

13. The sawing apparatus according claim 12, **characterized** in that the protective wall (9) is fastened to such a surface of the guide bar holder (3) which is substantially parallel to said plane.

14. The sawing apparatus according to any of the claims 5 to 13, **characterized** in that the protective wall (9) has a substantially L-shaped or U-shaped cross section.

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15. The sawing apparatus according to any of the claims 5 to 13, **characterized** in that the protective wall (9) is coated with flexible rubber or plastic material.

16. A safety device for a breaking saw chain, the safety device (7) comprising:

- a protective wall (9) to be positioned in the vicinity of a rotating drive gear (4) arranged for driving a saw chain (6) of a sawing apparatus (1),

**characterized in that:**

- the protective wall (9) is to be positioned in such a manner that it is capable of receiving the saw chain (6) that has broken during the sawing as well as the tail of the broken saw chain, and guiding them in a controlled manner to a desired direction, and
- wherein the protective wall (9) is coated with flexible rubber or plastic material.

17. The safety device according to claim 16, **characterized** in that the protective wall (9) covers a sector area of approximately 100° to 120°.

18. The safety device according to claim 16 or 17, **characterized** in that the first end of the protective wall (9) is located on the side of the incoming saw chain (6) and comprises a wall part (10) curving away from the drive gear (4) for guiding the broken saw chain between the drive gear (4) and the protective wall (9).

19. The safety device according to any of the claims 16 to 18, **characterized** in that the protective wall (9) is fastened to a rotating guide bar holder (3) or a moving part arranged to move in phase with the rotating guide bar holder (3) during the sawing of a tree trunk.

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20. The safety device according to any of the claims 16 to 19, **characterized** in that the protective wall (9) is fastened to a sawing apparatus (1) of a forest machine.